SCT-01

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – S2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M**.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

Maricopa Association of Governments
Received
AUG 24 2006

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Bruce Dressel, ITS Manager**	2.	Telephone: **480-312-2358**
3.	E-mail **bdressel@scottsdaleaz.gov**	4.	Date: **8/11/06**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Scottsdale

2. Year (Please check only one box):

   X FY 2008 ☐ FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   South Scottsdale

4. Type of Work (Description of the work to be performed):

   Controller and cabinet replacement

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $250,000

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP **x** CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $250,000

8. Type of Local Funds to be Used: (Please check only one box.):

   ☐ HURF ☐ Impact Fees

   ☐ General Fund ☐ Bond Proceeds

   X Sales Tax ☐ Private

   ☐ Property Tax ☐ Other, Please specify: _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $500,000.00

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

   This project will install controllers in the south area of Scottsdale, from McKellips to Indian School, and 64th Street to Pima Road.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

CMAQ Funded Controller Replacement Project
Calendar Years 2008 – 2010
City Of Scottsdale

This will be a three year project to replace all of the existing traffic signal controllers in Scottsdale. Currently, Scottsdale operates and maintains 276 traffic signals, with 10 new intersections expected to come on line in 2006. The existing 170 controllers have been in operation in Scottsdale for 20 years, with recent upgrades to HC11 170 controllers. All of the controllers have utilized Wapiti firmware which has been controlled by Transcore Series 2000 central software system.

While the current configuration was considered state of the art during its time, many improvements have allowed controller functionality to improve, including the increase in detector inputs and how those inputs are utilized.

Scottsdale will embark on several new configurations over the next five years, to include increased detection in the field, new functionality with controller firmware to utilize the increased detection inputs, and demand signal timing. Most of the new controllers will be converted to Internet Protocol Communications, (IP).

The project will replace approx. 100 controllers each year, and approx. 20 controller cabinets with additional detector slots for expansion. All of these installs will be on or in existing cabinets and foundations.

Justification for Controller Replacement

This project is ideal for CMAQ funding because ITS can relieve congestion by reducing traffic incidents through better traffic flow coordination. This project will improve existing transportation corridors and help to maintain smooth traffic flow. Replacement of these controllers and cabinets will link to existing and planned improvements in Scottsdale.

Scottsdale adopted an ITS Strategic Plan in April 2004. A complete copy of the Plan is available on the City of Scottsdale Website at www.scottsdaleaz.gov, *keyword traffic management*. According to the Plan, the objectives of ITS in Scottsdale are to (1) hold travel times on city streets steady, and, where possible, reduce travel time, even as traffic volume continues to grow; (2) reduce traffic incident delay; and (3) communicate rapidly among the Police Department, Emergency Services, Arizona Department of Transportation, Fire, vehicle drivers and Traffic Management Center to enhance roadway safety.

To address operations and maintenance goals and resources, Scottsdale annually reviews the Scottsdale ITS Strategic Plan during the City budget evaluation process. Operating plans need to keep pace with changing technology and to evolve with the City's changing resource environment. Approximately $1.1 million is spent annually by the Municipal Services Department to provide electricity and maintain traffic signals, while the Transportation Department spends approximately $500,000 annually to manage traffic flow and signalization, and to operate the Traffic Management Center and other ITS devices. All ITS devices are integrated with a central coordinated electronic traffic signal system, and linked to a Traffic Management Center where professionals manage and operate the signals and variable message signs using real-time information.

Estimated Cost of Replacements

Very little construction will occur with this project. Virtually all of the controllers will be installed in existing signal cabinets.

Where cabinets will be changed out, existing cabinet foundations will be utilized. All cabinet and controller replacements will be completed by City forces. Listed below are the estimated cost for cabinets and controllers:

Controllers with firmware = $4000 each
Cabinets and controller = $7000 each

Assumption is that just over 100 intersections will converted each year, from 2008 through 2010.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type:	2. Name of the Roadway Section Used for the ADT Estimate:	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☐ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes):	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes):	6. Length of the Facility (in miles):
7. Township Coordinate of the Midpoint of the Facility:	8 Range Coordinate of the Midpoint of the Facility:	9. Section Coordinate of the Midpoint of the Facility:

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor:

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
X	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

X Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
X The Project Conforms to Local Land Use Plans
X The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

X Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

#1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

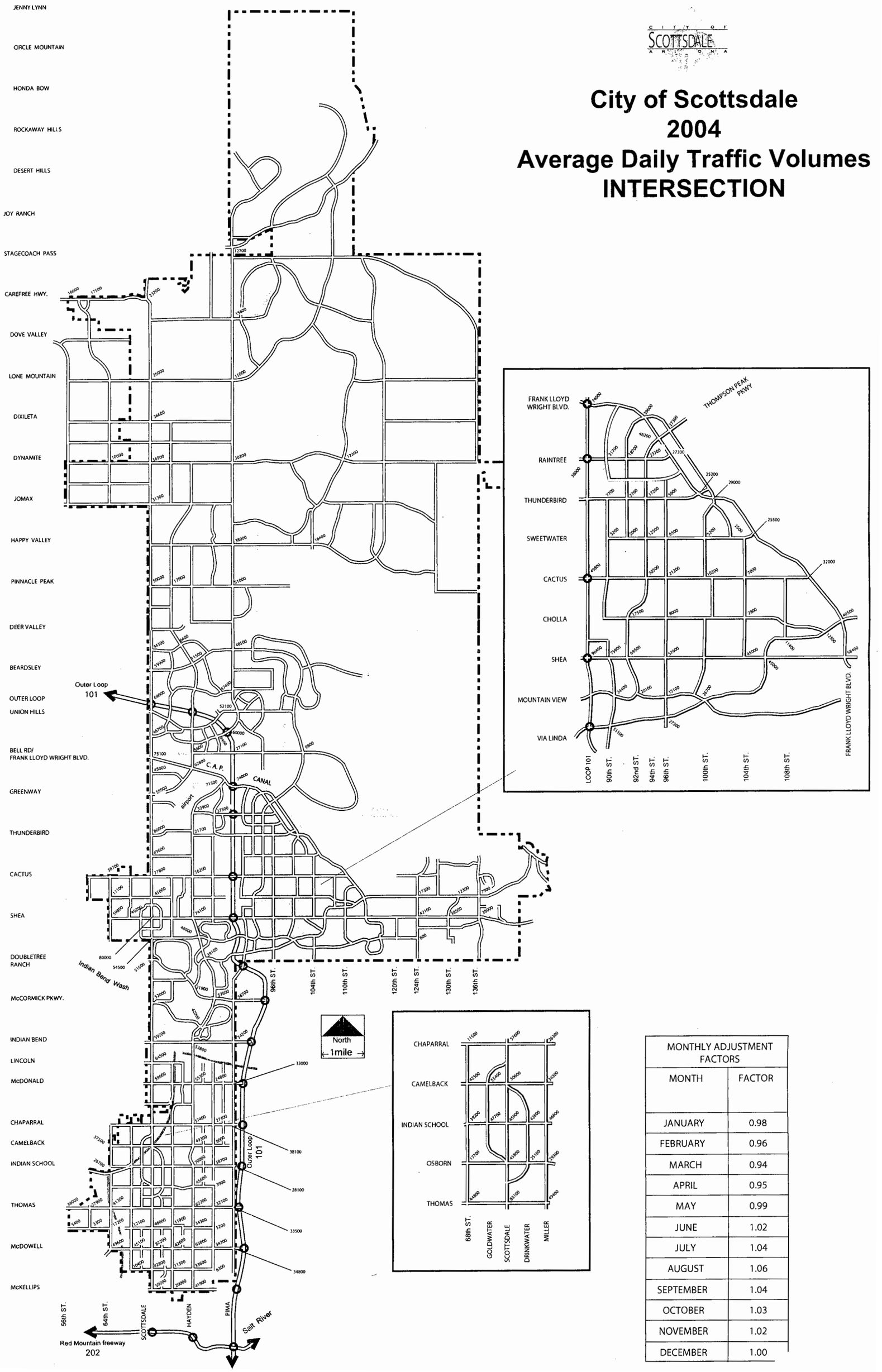
Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

City of Scottsdale
2004
Average Daily Traffic Volumes
INTERSECTION



MONTHLY ADJUSTMENT FACTORS	
MONTH	FACTOR
JANUARY	0.98
FEBRUARY	0.96
MARCH	0.94
APRIL	0.95
MAY	0.99
JUNE	1.02
JULY	1.04
AUGUST	1.06
SEPTEMBER	1.04
OCTOBER	1.03
NOVEMBER	1.02
DECEMBER	1.00

2009

SCT-0

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

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Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Bruce Dressel, ITS Manager**	2.	Telephone: **480-312-2358**
3.	E-mail **bdressel@scottsdaleaz.gov**	4.	Date: **8/11/06**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

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Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Scottsdale

2. Year (Please check only one box):

   FY 2008 **X** FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   South Scottsdale

4. Type of Work (Description of the work to be performed):

   Controller and cabinet replacement

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $250,000

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP **x** CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $250,000

8. Type of Local Funds to be Used: (Please check only one box.):

   ☐ HURF ☐ Impact Fees

   ☐ General Fund ☐ Bond Proceeds

   X Sales Tax ☐ Private

   ☐ Property Tax ☐ Other, Please specify: _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $500,000.00

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

   This project will install controllers in the south area of Scottsdale, from Indian School to Shea, and 64th Street to Pima Road.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

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4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

CMAQ Funded Controller Replacement Project
Calendar Years 2008 – 2010
City Of Scottsdale

This will be a three year project to replace all of the existing traffic signal controllers in Scottsdale. Currently, Scottsdale operates and maintains 276 traffic signals, with 10 new intersections expected to come on line in 2006. The existing 170 controllers have been in operation in Scottsdale for 20 years, with recent upgrades to HC11 170 controllers. All of the controllers have utilized Wapiti firmware which has been controlled by Transcore Series 2000 central software system.

While the current configuration was considered state of the art during its time, many improvements have allowed controller functionality to improve, including the increase in detector inputs and how those inputs are utilized.

Scottsdale will embark on several new configurations over the next five years, to include increased detection in the field, new functionality with controller firmware to utilize the increased detection inputs, and demand signal timing. Most of the new controllers will be converted to Internet Protocol Communications, (IP).

The project will replace approx. 100 controllers each year, and approx. 20 controller cabinets with additional detector slots for expansion. All of these installs will be on or in existing cabinets and foundations.

Justification for Controller Replacement

This project is ideal for CMAQ funding because ITS can relieve congestion by reducing traffic incidents through better traffic flow coordination. This project will improve existing transportation corridors and help to maintain smooth traffic flow. Replacement of these controllers and cabinets will link to existing and planned improvements in Scottsdale.

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To address operations and maintenance goals and resources, Scottsdale annually reviews the Scottsdale ITS Strategic Plan during the City budget evaluation process. Operating plans need to keep pace with changing technology and to evolve with the City's changing resource environment. Approximately $1.1 million is spent annually by the Municipal Services Department to provide electricity and maintain traffic signals, while the Transportation Department spends approximately $500,000 annually to manage traffic flow and signalization, and to operate the Traffic Management Center and other ITS devices. All ITS devices are integrated with a central coordinated electronic traffic signal system, and linked to a Traffic Management Center where professionals manage and operate the signals and variable message signs using real-time information.

Estimated Cost of Replacements

Very little construction will occur with this project. Virtually all of the controllers will be installed in existing signal cabinets.

Where cabinets will be changed out, existing cabinet foundations will be utilized. All cabinet and controller replacements will be completed by City forces. Listed below are the estimated cost for cabinets and controllers:

Controllers with firmware = $4000 each
Cabinets and controller = $7000 each

Assumption is that just over 100 intersections will converted each year, from 2008 through 2010.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type:	2. Name of the Roadway Section Used for the ADT Estimate:	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☐ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes):	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes):	6. Length of the Facility (in miles):
7. Township Coordinate of the Midpoint of the Facility:	8 Range Coordinate of the Midpoint of the Facility:	9. Section Coordinate of the Midpoint of the Facility:

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor:

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
X	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

X Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
X The Project Conforms to Local Land Use Plans
X The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

X Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

#1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

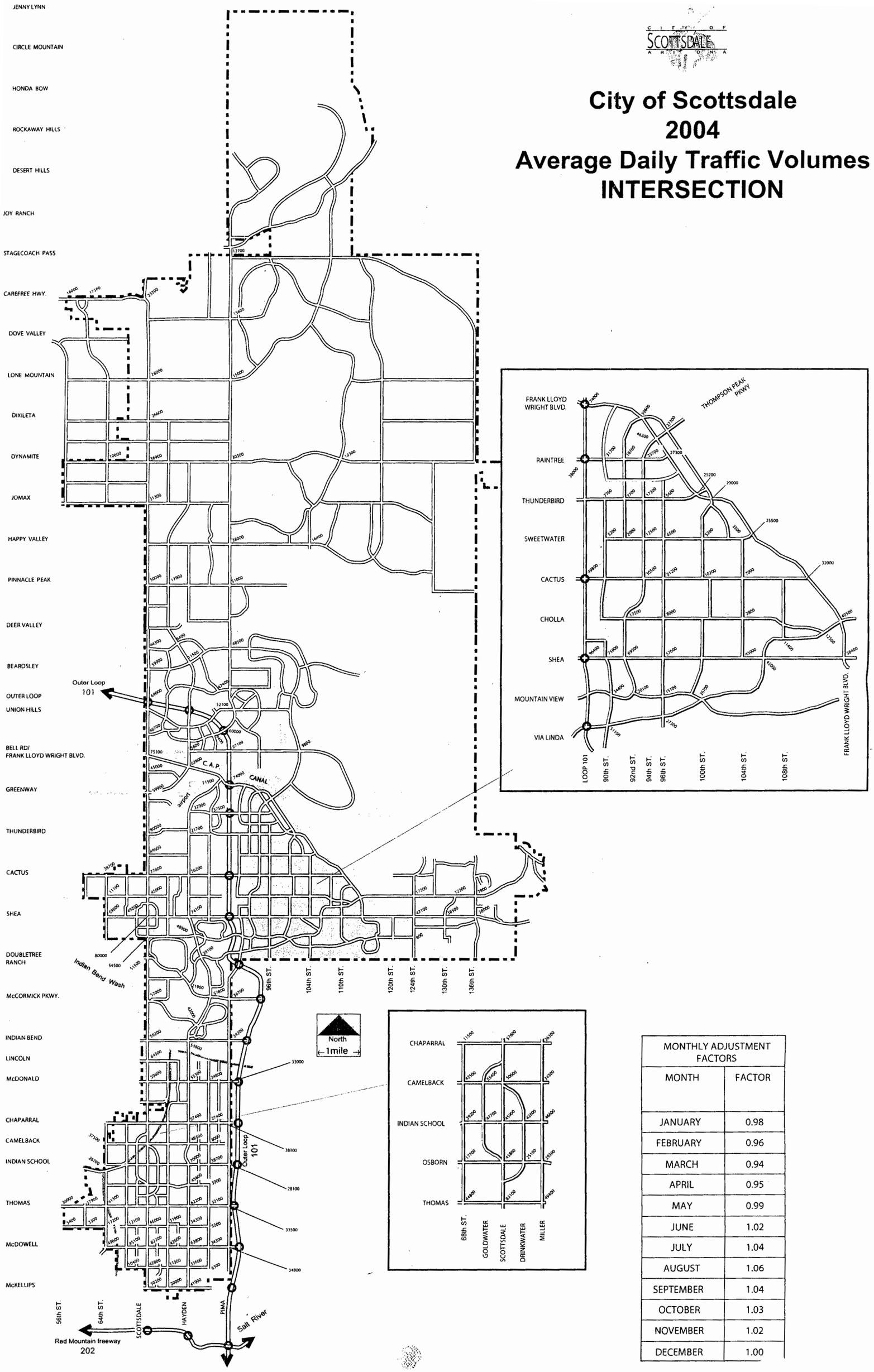
Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

City of Scottsdale
2004
Average Daily Traffic Volumes
INTERSECTION



MONTHLY ADJUSTMENT FACTORS	
MONTH	FACTOR
JANUARY	0.98
FEBRUARY	0.96
MARCH	0.94
APRIL	0.95
MAY	0.99
JUNE	1.02
JULY	1.04
AUGUST	1.06
SEPTEMBER	1.04
OCTOBER	1.03
NOVEMBER	1.02
DECEMBER	1.00

2010 SCT-03

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – S2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M**.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. in Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

Maricopa Association of Governments
Received
AUG 24 2006

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Bruce Dressel, ITS Manager**	2.	Telephone: **480-312-2358**
3.	E-mail **bdressel@scottsdaleaz.gov**	4.	Date: **8/11/06**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Scottsdale

2. Year (Please check only one box):

   FY 2008 ☐ FY 2009 **X** FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   South Scottsdale

4. Type of Work (Description of the work to be performed):

   Controller and cabinet replacement

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $250,000

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP **x** CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $250,000

8. Type of Local Funds to be Used: (Please check only one box.):

   ☐ HURF ☐ Impact Fees

   ☐ General Fund ☐ Bond Proceeds

   X Sales Tax ☐ Private

   ☐ Property Tax ☐ Other, Please specify: _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $500,000.00

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

   This project will install controllers in the south area of Scottsdale, from Shea to the north City limits, and 64th Street to 136th Street.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

CMAQ Funded Controller Replacement Project
Calendar Years 2008 – 2010
City Of Scottsdale

This will be a three year project to replace all of the existing traffic signal controllers in Scottsdale. Currently, Scottsdale operates and maintains 276 traffic signals, with 10 new intersections expected to come on line in 2006. The existing 170 controllers have been in operation in Scottsdale for 20 years, with recent upgrades to HC11 170 controllers. All of the controllers have utilized Wapiti firmware which has been controlled by Transcore Series 2000 central software system.

While the current configuration was considered state of the art during its time, many improvements have allowed controller functionality to improve, including the increase in detector inputs and how those inputs are utilized.

Scottsdale will embark on several new configurations over the next five years, to include increased detection in the field, new functionality with controller firmware to utilize the increased detection inputs, and demand signal timing. Most of the new controllers will be converted to Internet Protocol Communications, (IP).

The project will replace approx. 100 controllers each year, and approx. 20 controller cabinets with additional detector slots for expansion. All of these installs will be on or in existing cabinets and foundations.

Justification for Controller Replacement

This project is ideal for CMAQ funding because ITS can relieve congestion by reducing traffic incidents through better traffic flow coordination. This project will improve existing transportation corridors and help to maintain smooth traffic flow. Replacement of these controllers and cabinets will link to existing and planned improvements in Scottsdale.

Scottsdale adopted an ITS Strategic Plan in April 2004. A complete copy of the Plan is available on the City of Scottsdale Website at www.scottsdaleaz.gov, *keyword traffic management.* According to the Plan, the objectives of ITS in Scottsdale are to (1) hold travel times on city streets steady, and, where possible, reduce travel time, even as traffic volume continues to grow; (2) reduce traffic incident delay; and (3) communicate rapidly among the Police Department, Emergency Services, Arizona Department of Transportation, Fire, vehicle drivers and Traffic Management Center to enhance roadway safety.

To address operations and maintenance goals and resources, Scottsdale annually reviews the Scottsdale ITS Strategic Plan during the City budget evaluation process. Operating plans need to keep pace with changing technology and to evolve with the City's changing resource environment. Approximately $1.1 million is spent annually by the Municipal Services Department to provide electricity and maintain traffic signals, while the Transportation Department spends approximately $500,000 annually to manage traffic flow and signalization, and to operate the Traffic Management Center and other ITS devices. All ITS devices are integrated with a central coordinated electronic traffic signal system, and linked to a Traffic Management Center where professionals manage and operate the signals and variable message signs using real-time information.

Estimated Cost of Replacements

Very little construction will occur with this project. Virtually all of the controllers will be installed in existing signal cabinets.

Where cabinets will be changed out, existing cabinet foundations will be utilized. All cabinet and controller replacements will be completed by City forces. Listed below are the estimated cost for cabinets and controllers:

Controllers with firmware = $4000 each
Cabinets and controller = $7000 each

Assumption is that just over 100 intersections will converted each year, from 2008 through 2010.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type:	2. Name of the Roadway Section Used for the ADT Estimate:	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☐ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes):	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes):	6. Length of the Facility (in miles):
7. Township Coordinate of the Midpoint of the Facility:	8 Range Coordinate of the Midpoint of the Facility:	9. Section Coordinate of the Midpoint of the Facility:

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor:

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
X	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

X Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
X The Project Conforms to Local Land Use Plans
X The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

X Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

#1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

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- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

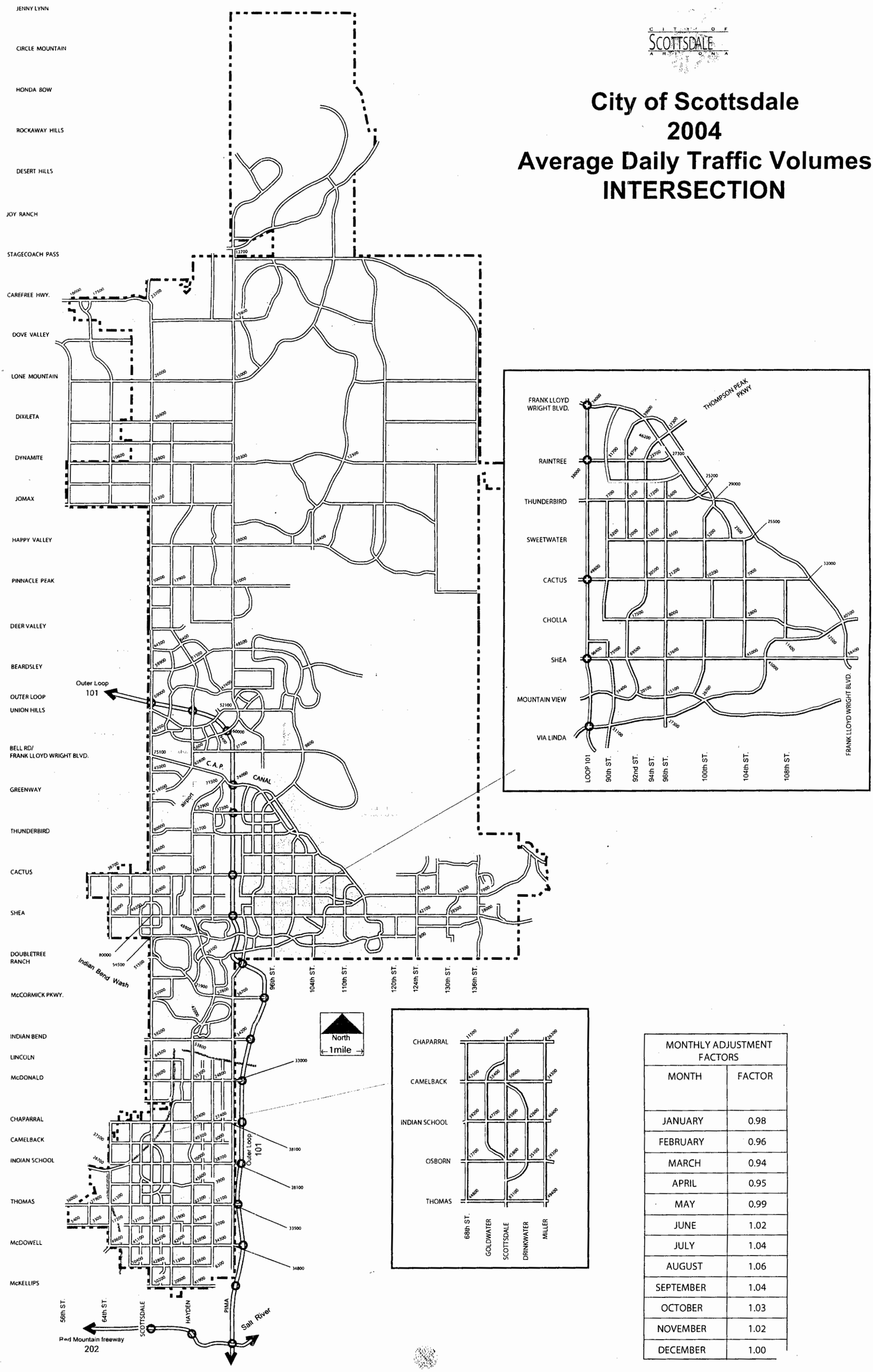
Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

City of Scottsdale
2004
Average Daily Traffic Volumes
INTERSECTION



MONTHLY ADJUSTMENT FACTORS	
MONTH	FACTOR
JANUARY	0.98
FEBRUARY	0.96
MARCH	0.94
APRIL	0.95
MAY	0.99
JUNE	1.02
JULY	1.04
AUGUST	1.06
SEPTEMBER	1.04
OCTOBER	1.03
NOVEMBER	1.02
DECEMBER	1.00

SCT-04

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently funding is available only for **FY 2012**.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

Maricopa Association of Governments
Received
AUG 24 2006

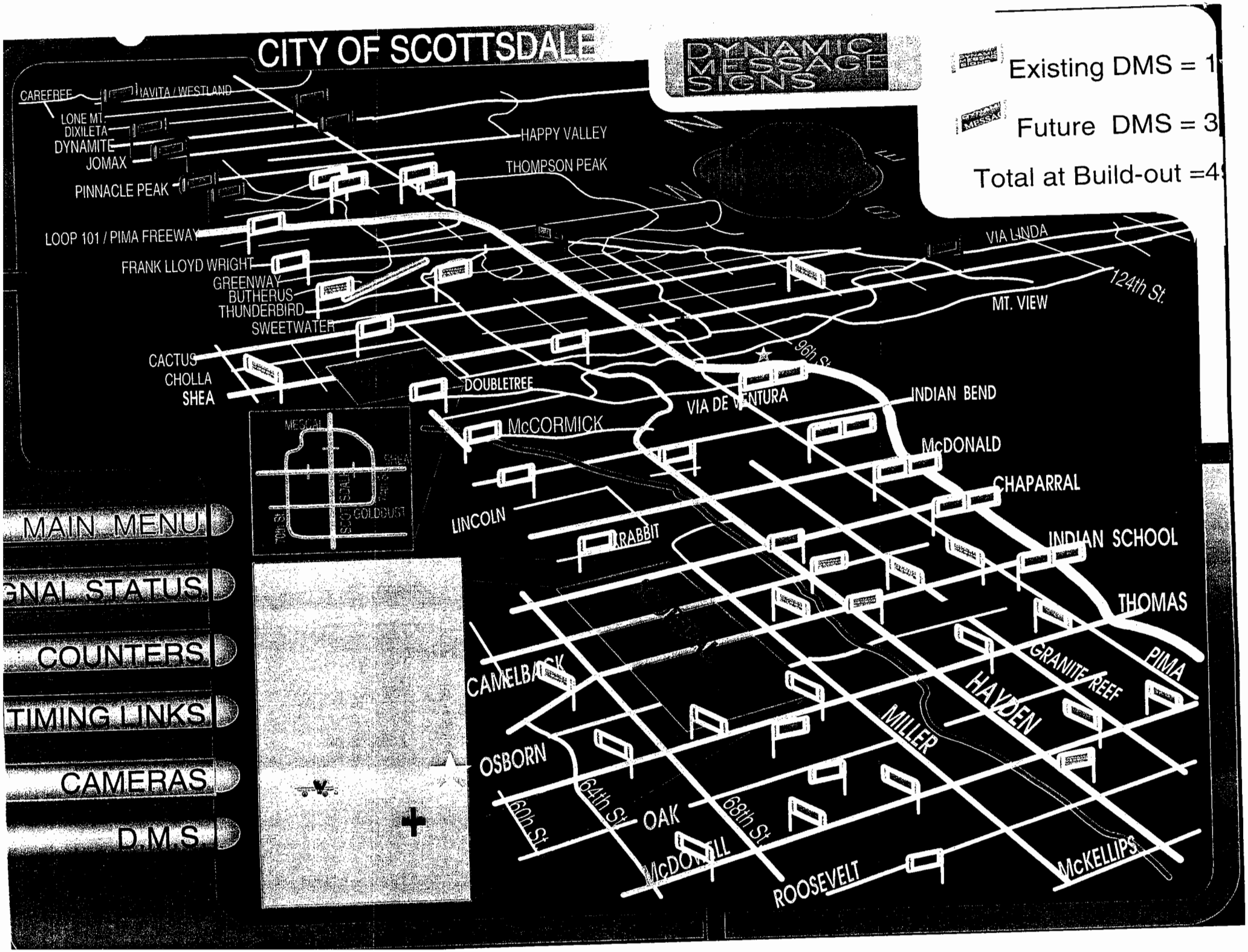
If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Bruce Dressel**	2.	Telephone: **480-312-2358**
3.	E-mail **bdressel@scottsdaleaz.gov**	4.	Date: **8/15/06**


CITY OF SCOTTSDALE
DYNAMIC MESSAGE SIGNS
Existing DMS = 1
Future DMS = 3
Total at Build-out =4
CAREFREE
AVITA / WESTLAND
LONE MT.
DIXILETA
DYNAMITE
JOMAX
PINNACLE PEAK
HAPPY VALLEY
THOMPSON PEAK
LOOP 101 / PIMA FREEWAY
FRANK LLOYD WRIGHT
GREENWAY
BUTHERUS
THUNDERBIRD
SWEETWATER
CACTUS
CHOLLA
SHEA
DOUBLETREE
McCORMICK
VIA DE VENTURA
VIA LINDA
124th St.
MT. VIEW
96th St.
INDIAN BEND
McDONALD
CHAPARRAL
INDIAN SCHOOL
THOMAS
PIMA
GRANITE REEF
HAYDEN
MILLER
LINCOLN
RABBIT
CAMELBACK
OSBORN
60th St.
64th St.
OAK
McDONNELL
68th St.
ROOSEVELT
McKELLIPS
MESCAL
SHEA
GOLDDUST
MAIN MENU
GNAL STATUS
COUNTERS
TIMING LINKS
CAMERAS
D.M.S

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently funding is available only for **FY 2012**.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name: **City of Scottsdale**	2. Year (Please check only one box): x FY 2012
3. Project Location (The project limits if applicable): **Shea Blvd. (south) to Carefree highway (north), 56th Street (west) to 136th Street (east)**	
4. Type of Work (Description of the work to be performed): **Install remaining DMS signs**	
5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.): **$250,000**	6. Type of Federal Funds Requested (Please check only one box.): ☐ MAG STP ☐ CMAQ
7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.): **$250,000**	8. Type of Local Funds to be Used: (Please check only one box.): ☐ HURF ☐ Impact Fees ☐ General Fund ☐ Bond Proceeds x Sales Tax ☐ Private ☐ Property Tax ☐ Other, Please specify: _____
9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested): **$500,000**	

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

   A map of the proposed DMS' is attached. ***(Items in Red are the proposed sites).***

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes design, right-of-way acquisition and construction phases, identification of any major structures (e.g. bridges) to be constructed and the relationship of the project to other programmed and planned projects in the TIP, regional plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Explain how the project addresses multi-modal issues. For example, show how the project accommodates the needs of bicyclists and pedestrians by including facilities designed in accordance with: (a) MAG Pedestrian Plan 2000; (b) MAG Pedestrian Area Policies and Design Guidelines; (c) MAG Regional Bicycle Plan; (d) MAG Regional Off-Street System Plan. Describe the pedestrian and/or bicycle facility included in the project and how that facility meets the guidance of the above documents.

5. Explain how this facility meets the needs of older adults. For example, which design elements from FHWA's Highway Design Handbook For Older Drivers and Pedestrians will be incorporated into this project: (a) Larger, better-illuminated signs and higher contrast signage; (b) Advanced distance notification of required tasks (e.g. merge, four-way stops); (c) Consistent overhead placement of lane-use control signs; (d) Increase pedestrian control-signal timing based on an assumed walking speed of .85 meters per second; The use of protected-only operations in turning lanes; Any other older adult considerations.

6. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

7. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

Question 2: Project Description

This project will install Dynamic Message Signs (DMS) in northern and eastern areas of the City of Scottsdale in an area generally bounded by the Carefree Highway on the north, Shea Boulevard to the south, 136th Street to the east and 56th Street to the west. The project map included as a part of this proposal identifies existing DMS locations and the far-term DMS locations requested as a part of this proposal. These devices will link with the City's Traffic Management Center and other ITS smart corridors to implement the key service areas identified in the Scottsdale ITS Strategic Plan. These devices will also be NTCIP compliant for future shared use with other municipalities and the State. The Plan, adopted in 2004, identifies four key service areas for the city: (1) signal coordination; (2) incident detection; (3) ITS maintenance and (4) work zones. Coordinating traffic signals helps to minimize traffic delay and negative air quality impacts associated with traffic congestion. Detecting incidents and communicating information to the Traffic Management Center helps to enhance roadway efficiency and safety. The DMS will allow dissemination of this information in real-time. ITS maintenance is required to ensure effective and efficient system operation, avoiding preventable roadway delay and enhancing safety. Work zone management helps to reduce roadway delay, and enhance driver and worker safety, through traffic management, traveler information and incident management.

The ITS Market Package addressed by this project is: ATMS01, ATMS03, ATMS08, EM02 and MC10. The three primary user services identified in the MAG ITS Strategic Plan addressed by this project are: Traffic Control (1.6), Incident Management (1.7), and Travel Demand Management (1.8). The three primary user needs identified in the MAG ITS Strategic Plan addressed by this project are: need to reduce incident clearance time (user need 5); need to improve accuracy and timeliness of traffic information to the public (user need 6) and need to increase use of VMS for more types of traffic and incident information (user need 7). This project comes one year after the installation of federally funded CCTV camera installation. The reason is that cameras allow verification of incidents and accidents prior to activating DMS with incident significant messages.

Because these devices will be installed in the northeast area of Scottsdale, 2004 congestion data for major arterial segments within this area are provided below.

Arterial	Segment	Traffic Volume	Segment Length	Number of Travel Lanes
Scottsdale Road	Shea to Cholla	42,500	0.5	6
	Cholla to Cactus	42,700	0.5	6
	Cactus to Sweetwater	46,800	0.5	6
	Sweetwater to Thunderbird	46,600	0.5	6
	Thunderbird to Butherus	45,200	0.75	6
	Butherus to Paradise	39,500	0.75	6
	Paradise to Frank Lloyd Wright	44,100	0.35	6
	Frank Lloyd Wright to Princess	44,300	0.5	4
	Princess to 101 Freeway	42,800	0.75	4
	101 Freeway to Thompson Peak	59,300	0.75	4
	Thompson Peak to Grayhawk	43,100	0.5	4
	Grayhawk to Pinnacle Peak	43,100	0.5	4
	Pinnacle Peak to Jomax	33,800	1.0	4
	Jomax to Dynamite	29,600	1.0	4
	Dynamite to Dixileta	26,200	1.0	4
	Dixileta to Lone Mountain	21,900	1.0	4
	Lone Mountain to Carefree	21,500	1.0	4
Pima Road	Princess to Downing Olson	45,400	0.7	4
	Downing Olson to Thompson Peak	43,000	1.3	4
	Thompson Peak to Pinnacle Peak	36,000	1.5	4
	Pinnacle Peak to Happy Valley	37,000	0.5	4
	Happy Valley to Dynamite	18,300	2.0	4
	Dynamite to Lone Mountain	13,800	2.0	2
	Lone Mountain to Westland/Legend Trail	13,400	1.5	2
	Westland/Legend Trail to Stagecoach	10,200	1.5	2

Arterial	Segment	Traffic Volume	Segment Length	Number of Travel Lanes
Shea Blvd.	64th to 68th	49,000	0.5	6
	68th to Scottsdale	44,700	0.5	6
	Scottsdale to Hayden	45,600	1.0	6
	Hayden to 101 Freeway	48,600	1.0	6
	101 Freeway to 90th	68,100	0.25	6
	90th to 92nd	55,200	0.25	6
	92nd to 96th	49,900	0.5	6
	96th to Via Linda	46,500	1.25	6
	Via Linda to Frank Lloyd Wright	44,400	1.0	6
	Frank Lloyd Wright to 124th	42,900	1.25	6
	124th to 130th	36,400	0.75	6
	130th to 136th	35,000	0.75	6
Carefree Highway	56th to 60th	15,200	0.5	2
	60th to Scottsdale	14,000	1.5	2

Question 3: Project Justification

This project is ideal for CMAQ funding because ITS can relieve congestion by reducing traffic incidents through better traffic flow coordination and advanced traveler information. This project will improve existing transportation corridors and help to maintain smooth traffic flow. Construction of these ITS improvements will link to existing and planned improvements in Scottsdale.

Scottsdale adopted an ITS Strategic Plan in April 2004. A complete copy of the Plan is available on the City of Scottsdale Website at www.scottsdaleaz.gov, *keyword traffic management*. According to the Plan, the objectives of ITS in Scottsdale are to (1) hold travel times on city streets steady, and, where possible, reduce travel time, even as traffic volume continues to grow; (2) reduce traffic incident delay; and (3) communicate rapidly among the Police Department, Emergency Services, Arizona Department of Transportation, Fire, vehicle drivers and Traffic Management Center to enhance roadway safety.

To address operations and maintenance goals and resources, Scottsdale annually reviews the Scottsdale ITS Strategic Plan during the City budget evaluation process. Operating plans need to keep pace with changing technology and to evolve with the City's changing resource environment. Approximately $1.1 million is spent annually by the Municipal Services Department to provide electricity and maintain traffic signals, while the Transportation Department spends approximately $500,000 annually to manage traffic flow and signalization, and to operate the Traffic Management Center and other ITS devices. All ITS devices are integrated with a central coordinated electronic traffic signal system, and linked to a Traffic Management Center where professionals manage and operate the signals and variable message signs using real-time information.

Question 4: Multi-Modal Issues

Although not a component of this project, the City of Scottsdale does accommodate the needs of bicyclists and pedestrians in street infrastructure by providing bicycle lanes and sidewalks on streets, bicycle parking, and multi-use paths.

Question 5: Needs of Older Adults

This project will help meet the needs of older adults by installing cameras that helps provide traffic users with important travel information. Providing traffic information in advance provides consideration to those with slower reaction time, including older adults and young drivers.

Question 6: Cost Estimate

Item	Unit	Qty.	Unit Cost	Total
Conduit and communications	Each	10	$5,000	$50,000
DMS	Each	10	$55,000	$550,000
Project Total				$600,000
Local Match		50%		$300,000
Federal Share		50%		$300,000

Question 7: Project Schedule

We anticipate a typical obligation schedule for this project. Design will be done with local funds, and Scottsdale is in the process of seeking certification acceptance from ADOT. The environmental, right-of-way and utilities clearance is expected to take approximately 18 to 24 months. The specific schedule will depend on the year in which funds are programmed; we anticipate a 12-18 month local design process.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **59,300**	2. Name of the Roadway Section Used for the ADT Estimate: **Scottsdale Road., 101 Freeway to Thompson Peak**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) x Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **6**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **6**	6. Length of the Facility (in miles): **0.75**
7. Township Coordinate of the Midpoint of the Facility: **T4N**	8 Range Coordinate of the Midpoint of the Facility: **R4E**	9. Section Coordinate of the Midpoint of the Facility: **26**

10. If the project improves traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor:

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
x	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

☐ Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
x Includes FMS Improvements
x The Project Conforms to Local Land Use Plans
x The facility is on the adopted MAG Roads of Regional Significance Network
☐ Adds Traffic Signals that increase pedestrian crossing time for seniors

12 Management System (Please check only one box)

x Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1 of 1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Committee Rating System

The Rating System Subcommittee of the MAG ITS Committee is responsible for developing and refining the MAG ITS Project Rating System. The initial effort on developing a project rating system was launched in 1998 and was used to compare projects in 1998 and 1999. It was by no means a perfect system, but provided a systematic and an objective method to compare projects, taking into account key factors considered important by the committee. The subcommittee further revised this system in June 2000 and in August 2001. The current system was adopted by the MAG ITS Committee on September 6, 2001.

The primary purpose of the ITS Project Rating System is to help the MAG ITS Committee prioritize ITS projects submitted by member agencies for inclusion in the annual update of the Transportation Improvement Program (TIP). Only projects that qualify as ITS projects are rated using this system. How projects are deemed qualified as ITS projects eligible for federal funds, is based on the National ITS Architecture developed by the USDOT. A regional architecture that is compatible with the National ITS Architecture is a requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems. Market Package definitions contained within National ITS Architecture documents are used as the sole criteria to determine whether a candidate project submitted by a MAG member agency for inclusion in the TIP qualifies as an ITS project. Projects that may not meet federal requirements to qualify as an ITS project may qualify for federal funding as a street improvement project.

A number of factors are considered in the ITS Project Rating System. They ensure that projects that foster regional integration, consistency with regional architecture, cost-benefit ratio, and equity are given due credit in the project prioritization process. The rating system accomplishes the following:

- Provides the ability to rate projects submitted by all member agencies on an objective basis
- Encourages integrated rather than fragmented systems
- Encourages regional cooperation
- Encourages projects that extend seamlessly across boundaries
- Encourages projects that are likely to yield higher cost-benefits ratio
- Encourages higher matching funds by cities - stretches the federal funds for more projects

Website for ITS data entry

To provide information for the ITS project rating System and obtain the needed reports and other information on ITS see the MAG website at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Contact Information

Please contact Sarath Joshua at (602) 254-6300 or sjoshua@mag.maricopa.gov for additional information or questions.

SUR-01

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently funding is available only for **FY 2012**.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **City of Surprise**	2.	Telephone: **623-583-6025**
3.	E-mail **Robert.Maki@surpriseaz.com**	4.	Date: **09-01-06**

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ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently funding is available only for **FY 2008, FY 2009, FY 2010 and FY 2012.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Surprise

2. Year (Please check only one box):

   ☒ FY 2008 ☐ FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   Coyote Lakes & Bell; Dysart & Bell; 134th Avenue & Bell (Bell Road Phase 1 Fiber addition)

4. Type of Work (Description of the work to be performed):

   Equipment (CCTV cameras) and installation

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $20,000

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP ☒ CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $10,000

8. Type of Local Funds to be Used: (Please check only one box.):

   ☐ HURF ☐ Impact Fees
   ☒ General Fund ☐ Bond Proceeds
   ☐ Sales Tax ☐ Private
   ☐ Property Tax ☐ Other, Please specify: _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $30,000

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes design, right-of-way acquisition and construction phases, identification of any major structures (e.g. bridges) to be constructed and the relationship of the project to other programmed and planned projects in the TIP, regional plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Explain how the project addresses multi-modal issues. For example, show how the project accommodates the needs of bicyclists and pedestrians by including facilities designed in accordance with: (a) MAG Pedestrian Plan 2000; (b) MAG Pedestrian Area Policies and Design Guidelines; (c) MAG Regional Bicycle Plan; (d) MAG Regional Off-Street System Plan. Describe the pedestrian and/or bicycle facility included in the project and how that facility meets the guidance of the above documents.

5. Explain how this facility meets the needs of older adults. For example, which design elements from FHWA's Highway Design Handbook For Older Drivers and Pedestrians will be incorporated into this project: (a) Larger, better-illuminated signs and higher contrast signage; (b) Advanced distance notification of required tasks (e.g. merge, four-way stops); (c) Consistent overhead placement of lane-use control signs; (d) Increase pedestrian control-signal timing based on an assumed walking speed of .85 meters per second; The use of protected-only operations in turning lanes; Any other older adult considerations.

6. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

7. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **65,000**	2. Name of the Roadway Section Used for the ADT Estimate: **Bell Road**	3. Type of Facility to be Improved (Check only one box): ☒ Arterial > 4 legs (e.g. Grand) ☐ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **6**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **6**	6. Length of the Facility (in miles): **2.5**
7. Township Coordinate of the Midpoint of the Facility: **T3N, T4N**	8 Range Coordinate of the Midpoint of the Facility: **R1W**	9. Section Coordinate of the Midpoint of the Facility: **2 and 35**

10. If the project improves traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **45 mph**

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☒	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

- ☐ Includes Traffic Signal Improvements for a Single Agency
- ☒ Includes Traffic Signal Improvements that Apply to More than One Agency
- ☐ Includes FMS Improvements
- ☒ The Project Conforms to Local Land Use Plans
- ☒ The facility is on the adopted MAG Roads of Regional Significance Network
- ☐ Adds Traffic Signals that increase pedestrian crossing time for seniors

12 Management System (Please check only <u>one</u> box)

- ☒ Congestion Management System (CMS)
- ☐ Bridge Management System (BMS)
- ☐ Pavement Management System (PMS)
- ☐ Public Transportation Management System (PTMS)
- ☐ Safety Management System (SMS)
- ☐ Intermodal Management System (IMS)
- ☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1 for 2008

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Committee Rating System

The Rating System Subcommittee of the MAG ITS Committee is responsible for developing and refining the MAG ITS Project Rating System. The initial effort on developing a project rating system was launched in 1998 and was used to compare projects in 1998 and 1999. It was by no means a perfect system, but provided a systematic and an objective method to compare projects, taking into account key factors considered important by the committee. The subcommittee further revised this system in June 2000 and in August 2001. The current system was adopted by the MAG ITS Committee on September 6, 2001.

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- Encourages integrated rather than fragmented systems
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- Encourages projects that extend seamlessly across boundaries
- Encourages projects that are likely to yield higher cost-benefits ratio
- Encourages higher matching funds by cities - stretches the federal funds for more projects

Website for ITS data entry

To provide information for the ITS project rating System and obtain the needed reports and other information on ITS see the MAG website at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Contact Information

Please contact Sarath Joshua at (602) 254-6300 or sjoshua@mag.maricopa.gov for additional information or questions.

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Attachment to ITS Project Form Part A, Section 2:

1. See next page.

2. The project consists of purchasing Closed Circuit Television Cameras (CCTV) for three locations with the City of Surprise at the following intersections on Bell Road; Coyote Lakes Boulevard, Dysart Road, and 134th Drive. This will enhance and expand the viewing capabilities of the Surprise TMC. This equipment will be installed in the Bell Road Phase 1 segment.

3. The purchase and installation of this equipment will allow each intersection in the City of Surprise along Bell Road on west of US 60/Grand Ave to have a CCTV. This will allow the Surprise TMC to observe, monitor and adjust traffic flow and timing in this corridor. Phase 1 did not have enough funds to facilitate each intersection and this project will complete that need. Furthermore, as Phase 1 fiber has been planned, Maricopa County and the City of Peoria will be able to view images as traffic departing Surprise enters their communities.

4. This system will provide video monitoring of significant future east west traffic volumes and facilitate CCTV at each intersection within Bell Road fiber phase 1. This will have the same Mulit-model applications included in the Phase 1 Bell Road project.

5. Directly north of this corridor is the community of Sun City West with Sun City and Sun City Grand east and west of that, respectively. These communities are retirement and senior life style. The access to these communities is limited and mainly on Bell Road. Signal system optimization will allow this project to assist these drivers.

6. The cost estimates are based on unit prices from the Bell Road ITS project from US-60/Grand Avenue to Loop 101, Bell Road Phase 1.

7. Surprise has budgeted funds for one of the CCTV cameras with installation in the fiscal year 2008.

Project: Equipment – Video Detection
134th Drive, Dysart Road, and Coyote Lakes Parkway

SUR-02

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently funding is available only for **FY 2012.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006.** The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **City of Surprise**	2.	Telephone: **623-583-6025**
3.	E-mail **Robert.Maki@surpriseaz.com**	4.	Date: **9-1-06**

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ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently funding is available only for **FY 2008, FY 2009, FY 2010 and FY 2012.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Surprise

2. Year (Please check only one box):

   ☐ FY 2008 ☐ FY 2009 ☐ FY 2010 ☒ FY 2012

3. Project Location (The project limits if applicable):

   Bell Road between Loop 303 to Jackrabbitt (195th Avenue)

4. Type of Work (Description of the work to be performed):

   Designing & connecting all traffic signals, CCTV cameras & changeable message boards

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $1,200,000

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP ☒ CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $1,000,000

8. Type of Local Funds to be Used: (Please check only one box.):

   ☐ HURF ☒ Impact Fees

   ☐ General Fund ☐ Bond Proceeds

   ☐ Sales Tax ☐ Private

   ☐ Property Tax ☐ Other, Please specify: _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $2,200,000

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes design, right-of-way acquisition and construction phases, identification of any major structures (e.g. bridges) to be constructed and the relationship of the project to other programmed and planned projects in the TIP, regional plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Explain how the project addresses multi-modal issues. For example, show how the project accommodates the needs of bicyclists and pedestrians by including facilities designed in accordance with: (a) MAG Pedestrian Plan 2000; (b) MAG Pedestrian Area Policies and Design Guidelines; (c) MAG Regional Bicycle Plan; (d) MAG Regional Off-Street System Plan. Describe the pedestrian and/or bicycle facility included in the project and how that facility meets the guidance of the above documents.

5. Explain how this facility meets the needs of older adults. For example, which design elements from FHWA's Highway Design Handbook For Older Drivers and Pedestrians will be incorporated into this project: (a) Larger, better-illuminated signs and higher contrast signage; (b) Advanced distance notification of required tasks (e.g. merge, four-way stops); (c) Consistent overhead placement of lane-use control signs; (d) Increase pedestrian control-signal timing based on an assumed walking speed of .85 meters per second; The use of protected-only operations in turning lanes; Any other older adult considerations.

6. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

7. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **30,000**	2. Name of the Roadway Section Used for the ADT Estimate: **Bell Road**	3. Type of Facility to be Improved (Check only one box): ☒ Arterial > 4 legs (e.g. Grand) ☐ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **6**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **6**	6. Length of the Facility (in miles): **4**
7. Township Coordinate of the Midpoint of the Facility: **T3N/T4N**	8 Range Coordinate of the Midpoint of the Facility: **R2W**	9. Section Coordinate of the Midpoint of the Facility: **2 and 35**

10. If the project improves traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **45mph**

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☒ Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐ Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐ Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐ Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐ Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐ Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

- ☐ Includes Traffic Signal Improvements for a Single Agency
- ☒ Includes Traffic Signal Improvements that Apply to More than One Agency
- ☐ Includes FMS Improvements
- ☒ The Project Conforms to Local Land Use Plans
- ☒ The facility is on the adopted MAG Roads of Regional Significance Network
- ☐ Adds Traffic Signals that increase pedestrian crossing time for seniors

12 Management System (Please check only one box)

- ☒ Congestion Management System (CMS)
- ☐ Bridge Management System (BMS)
- ☐ Pavement Management System (PMS)
- ☐ Public Transportation Management System (PTMS)
- ☐ Safety Management System (SMS)
- ☐ Intermodal Management System (IMS)
- ☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1 for 2012

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Committee Rating System

The Rating System Subcommittee of the MAG ITS Committee is responsible for developing and refining the MAG ITS Project Rating System. The initial effort on developing a project rating system was launched in 1998 and was used to compare projects in 1998 and 1999. It was by no means a perfect system, but provided a systematic and an objective method to compare projects, taking into account key factors considered important by the committee. The subcommittee further revised this system in June 2000 and in August 2001. The current system was adopted by the MAG ITS Committee on September 6, 2001.

The primary purpose of the ITS Project Rating System is to help the MAG ITS Committee prioritize ITS projects submitted by member agencies for inclusion in the annual update of the Transportation Improvement Program (TIP). Only projects that qualify as ITS projects are rated using this system. How projects are deemed qualified as ITS projects eligible for federal funds, is based on the National ITS Architecture developed by the USDOT. A regional architecture that is compatible with the National ITS Architecture is a requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems. Market Package definitions contained within National ITS Architecture documents are used as the sole criteria to determine whether a candidate project submitted by a MAG member agency for inclusion in the TIP qualifies as an ITS project. Projects that may not meet federal requirements to qualify as an ITS project may qualify for federal funding as a street improvement project.

A number of factors are considered in the ITS Project Rating System. They ensure that projects that foster regional integration, consistency with regional architecture, cost-benefit ratio, and equity are given due credit in the project prioritization process. The rating system accomplishes the following:

- Provides the ability to rate projects submitted by all member agencies on an objective basis
- Encourages integrated rather than fragmented systems
- Encourages regional cooperation
- Encourages projects that extend seamlessly across boundaries
- Encourages projects that are likely to yield higher cost-benefits ratio
- Encourages higher matching funds by cities - stretches the federal funds for more projects

Website for ITS data entry

To provide information for the ITS project rating System and obtain the needed reports and other information on ITS see the MAG website at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Contact Information

Please contact Sarath Joshua at (602) 254-6300 or sjoshua@mag.maricopa.gov for additional information or questions.

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Attachment to ITS Project Form Part A, Section 2:

1. See next page.

2. The project consists of fiber optic cable, remote television cameras, signal interconnect and dynamic message signs to enhance and expand the fiber interconnect to the Surprise TMC. This segment runs on Bell Road from the 195th alignment to Loop 303 and will tie into the Bell Road Phase II. In the future this will connect to the ADOT FMS at the Bell Road and Loop 303 interchange. The City of Surprise has budgeted funds for design and approximately ½ the cost of the project.

3. This fiber interconnect will finish the Bell Road fiber and allow signal coordination from 195th Ave to Loop 101. Furthermore, this project will serve to connect traffic signals along Bell Road between 195th and Loop 303. With the anticipated growth of Surprise and Buckeye the Sun Valley Parkway/Bell Road will become a major through fare north of the White Tank Mountains. This project will also provide redundancy in the regional fiber loop as well as the City of Surprise fiber loop for the southern half of the City.

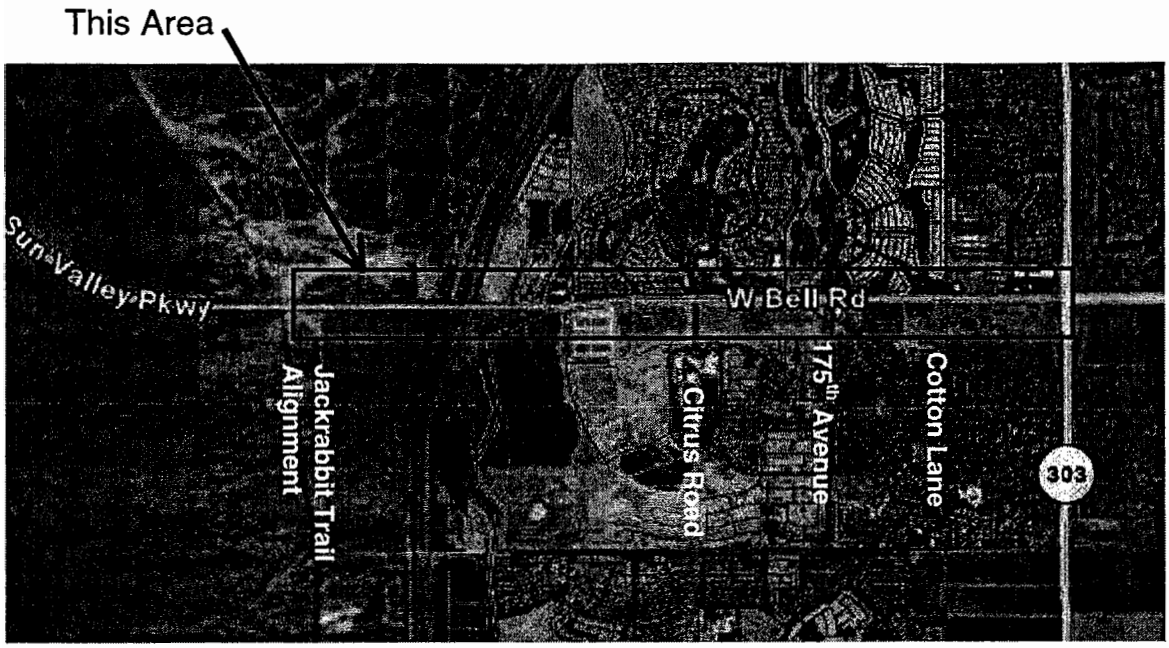
4. This system will provide video monitoring of significant future east west traffic volumes. Mulit-model applications include monitoring and controlling school bus traffic for one high school and two elementary schools just south of Bell Road. In addition this will also assist in the future planned bus circulator routes.

5. Directly north of this corridor are the communities of Happy Trails and Arizona Traditions. These are communities geared to the retirement and senior life style. The access to these communities is limited and mainly on Bell Road through this project scope. Signal system optimization will allow this project to assist these drivers.

6. The cost estimates are based on unit prices from the Bell Road ITS project from US-60/Grand Avenue to Loop 101, Bell Road Phase 1.

7. Surprise has budgeted funds for design and partial installation. The design will be completed in fiscal year 2011 and will be ready for the construction in the fiscal year 2012. All clearance will have been assured.

Project: Bell Road Fiber – Phase 3



TMP-01

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – $2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Jim Decker or Christine Warren**	2.	Telephone: 480-350-8320 or 480-858-2060
3.	E-mail **Jim_Decker@tempe.gov** **Christine_Warren@tempe.gov**	4.	Date: **09/01/06**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Tempe

2. Year (Please check only one box):

   ☒ FY 2008 ☐ FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   Citywide

4. Type of Work (Description of the work to be performed):

   Procure and Install Malfunction Management Units in all traffic control cabinets

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $157,262.00

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP ☒ CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $67,398.00

8. Type of Local Funds to be Used: (Please check only one box.):

   ☒ HURF ☐ Impact Fees

   ☐ General Fund ☐ Bond Proceeds

   ☐ Sales Tax ☐ Private

   ☐ Property Tax ☐ Other, Please specify: _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $224,660.00

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

See attachment

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

Tempe operates and maintains 200 traffic signals including all ADOT traffic interchanges within the city boundaries. A central traffic control computer system, which has the capability of adjusting traffic signal timing patterns based on time of day operation, controls these signals. Within the scope of our recent signal system projects, the city has replaced traffic signal control cabinets with NEMA TS2 cabinets and equipped each cabinet with an existing signal controller and malfunction management unit (MMU). To take advantage of the NEMA TS2 equipment platform and refresh our aging signal controller inventory, the city proposed to upgrade its signal controllers with new NEMA TS2 signal controllers on a programmed basis. To complete this modernization, the city proposes to replace the existing MMUs citywide. This equipment upgrade will enhance interchangeability of cabinet components, enhance system reliability, increase system diagnostic capabilities, and reduce liability exposure.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

This project will improve the reliability and safety of the traffic signal control operation. The upgraded Malfunction Management Units will provide the city's signal technicians with enhanced diagnostic tools to troubleshoot intersection malfunctions. These enhanced capabilities will facilitate increased intersection reliability and ultimately provide for safer traffic control operations. This project requires no new design, no right-of-way acquisition and no construction. This project is consistent with the regional transportation program as well as the local Capital Improvement Program.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

No.	Item	Installed Quantity		Unit Cost	Total Cost
1	Malfunction Management Units	200		$980.00	$196,000.00
2	Installation labor (In-kind)	200		$47.20	$9,440.00
3	Installation vehicles (in-kind)	200		$61.80	$12,360.00
4	Contingency .025			$4,900.00	$4,900.00
5	Project Management			$1,960.00	$1,960.00
	TOTAL				**$224,660.00**

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

Task 1 Prepare Specifications for equipment biding ----- June 2008
Task 2 Bid ----- July 2008
Task 3 Award Contract ----- September 2008
Task 4 Install ----- March 2009

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: Citywide	2. Name of the Roadway Section Used for the ADT Estimate: **Various Streets**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☒ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes):	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes):	6. Length of the Facility (in miles):
7. Township Coordinate of the Midpoint of the Facility: 1N	8 Range Coordinate of the Midpoint of the Facility: 4E	9. Section Coordinate of the Midpoint of the Facility: 15

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: 35

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☒	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

- ☒ Includes Traffic Signal Improvements for a Single Agency
- ☒ Includes Traffic Signal Improvements that Apply to More than One Agency
- ☐ The Project Conforms to Local Land Use Plans
- ☒ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

- ☒ Congestion Management System (CMS)
- ☐ Bridge Management System (BMS)
- ☐ Pavement Management System (PMS)
- ☐ Public Transportation Management System (PTMS)
- ☐ Safety Management System (SMS)
- ☐ Intermodal Management System (IMS)
- ☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

2

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

SYMBOL DESCRIPTION

AM= ADOT MODULAR POLE
TM = TEMPE MODULAR POLE
TT = TEMPE TAPERED POLE
F = FULLY PROTECTED
P = PERMISSIVE PROTECTED
O = NO LEFT TURN
S=SPLIT PHASE
EWNS=OPTIOSM DIRECTIONS

Quadrants in symbols represent corner vehicle turning from. Example: Northeast quadrant is westbound to southbound left turn

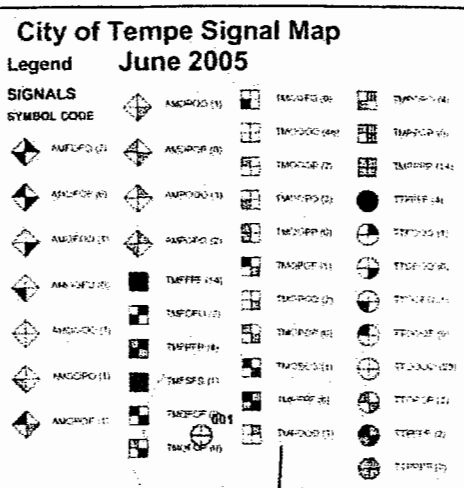
TMFPFP=Tempe Modular pole with fully protected LT movements in the NE and SW quadrants and permissive protected in the SE and NW quadrants.

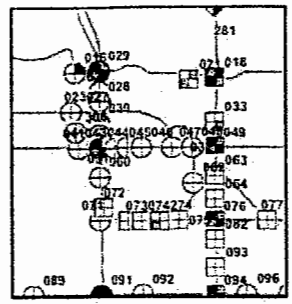
City of Tempe Signal Map

Legend June 2005

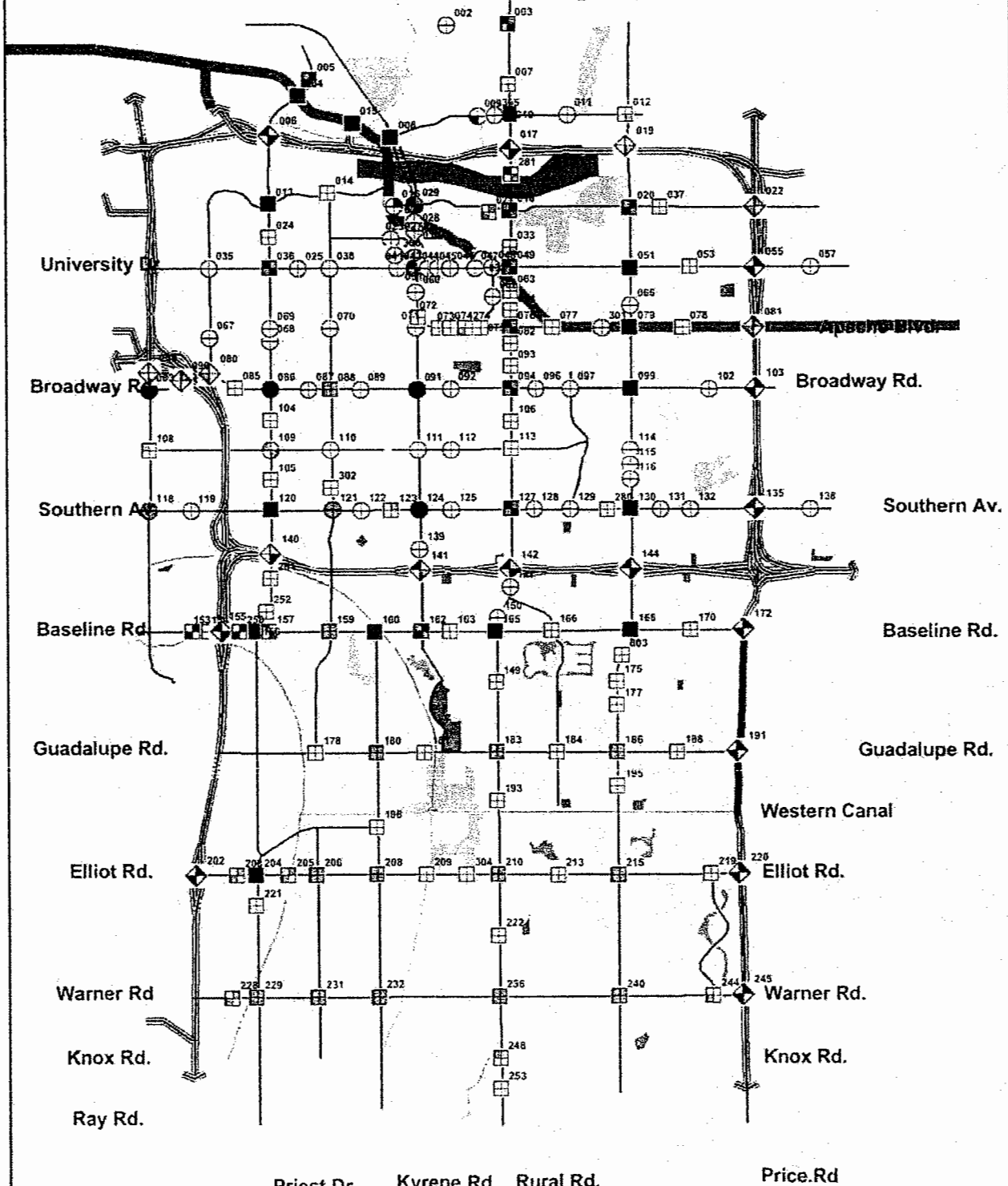
SIGNALS

SYMBOL CODE





DOWNTOWN AREA



TMP-02

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – S2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M**.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Jim Decker or Christine Warren**	2.	Telephone: 480-350-8320 or 480-858-2060
3.	E-mail **Jim_Decker@tempe.gov** **Christine_Warren@tempe.gov**	4.	Date: **09/01/06**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Tempe

2. Year (Please check only one box):

   ☒ FY 2008 ☐ FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   Citywide

4. Type of Work (Description of the work to be performed):

   ITS Network Engineer to support the City's ITS components

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $135,975.00

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP ☒ CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $58,275.00

8. Type of Local Funds to be Used: (Please check only one box.):

   ☐ HURF ☐ Impact Fees

   ☐ General Fund ☐ Bond Proceeds

   ☐ Sales Tax ☐ Private

   ☐ Property Tax ☒ Other, Please specify: **Transit Tax** _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $194,250.00

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

   Not feasible to provide one

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

To hire an individual full-time for two years that will provide high level electronic and technical support of the City's Intelligent Transportation System components. To perform technical work in the long-range planning, design and management of the Intelligent Transportation System utilized by the City. Program, troubleshoot, repair, maintain and operate existing and future ITS components.

Tempe will be requesting to permanently add a full-time ITS network engineer to our staff in 2010 as part of the CIP budget.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

The Tempe Transportation Management Center will employ state-of-the-art technologies to manage traffic and transit operations in an increasingly dynamic environment. The center will also serve to inform and advise transportation patrons of real-time travel information including conventional traveler information, Light Rail Transit (LRT), and bus transit schedule adherence information. Tempe operates and maintains 200 traffic signals including all ADOT traffic interchanges within the city boundaries and will maintain over 30 light trail traffic signals.

This project will provide funding for two years to hire an ITS network engineer to support operations and maintenance activities for the advancing ITS technologies that Tempe is installing. These technologies improve reliability and safety of the traffic signal control operation, facilitate increased intersection reliability and ultimately provide for safer and more efficient traffic control operations. Accident and incident management will be enhanced by additional monitoring capabilities while simultaneously allowing the transportation management staff the ability to monitor private and public transportation vehicles throughout the Tempe segment of light rail transportation facility, maximizing multi-modal coordination and safety operations. This project promotes multi-jurisdictional congestion relief goals by providing a platform to better maintain, operate and coordinate traffic signals as well as to respond to accidents/incidents in a more cooperative and efficient process.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

No.	Item	Installed Quantity		Unit Cost	Total Cost
1	Year One Labor and Benefits	1		$94,750.00	$94,750.00
2	Year Two Labor and Benefits	1		$99,500.00	$99,500.00
	TOTAL				**$194,250.00**

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

Task 1 – Solicit for candidates -- March 2008
Task 2 – Interview candidates -- April 2008
Task 3 – Select successful candidate -- May 2008

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: Citywide	2. Name of the Roadway Section Used for the ADT Estimate: **Various Streets**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☐ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes):	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes):	6. Length of the Facility (in miles):
7. Township Coordinate of the Midpoint of the Facility: 1N	8 Range Coordinate of the Midpoint of the Facility: 4E	9. Section Coordinate of the Midpoint of the Facility: 15

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor:

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐ Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐ Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐ Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐ Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐ Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐ Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

- ☒ Includes Traffic Signal Improvements for a Single Agency
- ☒ Includes Traffic Signal Improvements that Apply to More than One Agency
- ☐ The Project Conforms to Local Land Use Plans
- ☒ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

- ☒ Congestion Management System (CMS)
- ☐ Bridge Management System (BMS)
- ☐ Pavement Management System (PMS)
- ☐ Public Transportation Management System (PTMS)
- ☐ Safety Management System (SMS)
- ☐ Intermodal Management System (IMS)
- ☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Tempe

2. Year (Please check only one box):

   ☐ FY 2008 ☒ FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   Citywide

4. Type of Work (Description of the work to be performed):

   Video Traffic Detection

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $324,236

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP ☒ CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $138,959

8. Type of Local Funds to be Used: (Please check only one box.):

   ☒ HURF ☐ Impact Fees
   ☐ General Fund ☐ Bond Proceeds
   ☐ Sales Tax ☐ Private
   ☐ Property Tax ☐ Other, Please specify: _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $463,195

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

See attachment

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

The City currently utilizes tube counting and physical turning movement count technologies to obtain traffic count data for major arterials and intersections. This project proposes to utilize video detection and CCTV monitoring at arterial / arterial traffic signals to obtain real-time, 24 hours per day, 7 days per week turning movement count data. Utilizing the video detection equipment will also assist in better managing arterial operations due to the video that is provided by the video detection device. Additionally, several CCTV cameras will be installed at strategic locations to assist in real-time monitoring of the accuracy of the video detection devices and enhance congestion monitoring capabilities.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

This project mitigates congestion through enhanced traffic data collection and regional multi-agency signal coordination. Traffic speed improvements and /or traffic management strategies can be coordinated with real-time data sharing to better manage signal timing on the street networks. The City will be able to adjust traffic signal timing through centralized command and control strategies designed to help relieve or minimize congestion.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

No.	Item	Installed Quantity		Unit Cost	Total Cost
1	Video Detection Units	48		$6,000.00	$288,000.00
2	CCTV Camera Assembly (includes on-board video encoder, camera, motorized zoom lens, pan/tilt/zoom, receiver/driver, dome housing, mounting hardware and camera cable)	8		$15,000.00	$120,000.00
3	CAT5e patch cords	8		$3.00	$24.00
4	Surge protector	8		$116.00	$928.00
5	Router	8		$3,500.00	$28,000.00
6	Installation labor (In-kind)	112		$47.20	$5,286.00
7	Installation vehicles (in-kind)	112		$61.80	$6,921.00
8	Contingency .025			$11,229.00	$11,229.00
9	Project Management			$2,807.00	$2,807.00
	TOTAL				**$463,195.00**

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

Task 1 Prepare Specifications for equipment biding ----- June 2009
Task 2 Bid ----- July 2009
Task 3 Award Contract ----- September 2009
Task 4 Install ----- March 2010

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: Citywide	2. Name of the Roadway Section Used for the ADT Estimate: **Various Streets**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☒ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes):	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes):	6. Length of the Facility (in miles):
7. Township Coordinate of the Midpoint of the Facility: 1N	8 Range Coordinate of the Midpoint of the Facility: 4E	9. Section Coordinate of the Midpoint of the Facility: 15

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: 35

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐ Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐ Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐ Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☒ Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐ Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐ Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

☒ Includes Traffic Signal Improvements for a Single Agency
☒ Includes Traffic Signal Improvements that Apply to More than One Agency
☐ The Project Conforms to Local Land Use Plans
☒ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

☒ Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

SYMBOL DESCRIPTION

AM= ADOT MODULAR POLE
TM = TEMPE MODULAR POLE
TT = TEMPE TAPERED POLE
F = FULLY PROTECTED
P = PERMISSIVE PROTECTED
O = NO LEFT TURN
S=SPLIT PHASE
EWNS=OPTICOM DIRECTIONS

Quadrants in symbols represent corner vehicle turning from. Example: Northeast quadrant is westbound to southbound left turn

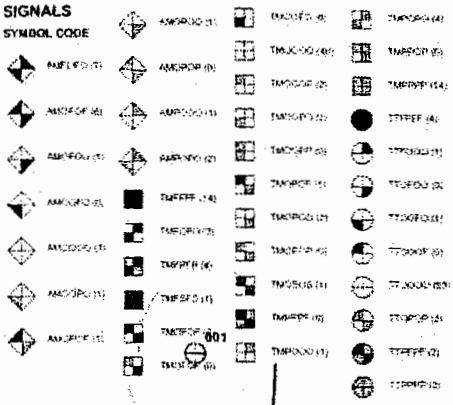
TMFPP=Tempe Modular pole with fully protected LT movements in the NE and SW quadrants and permissive protected in the SE and NW quadrants.

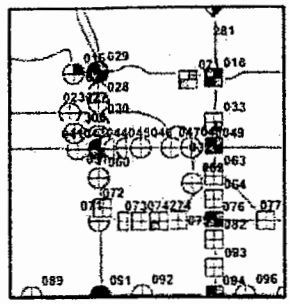
City of Tempe Signal Map

Legend June 2005

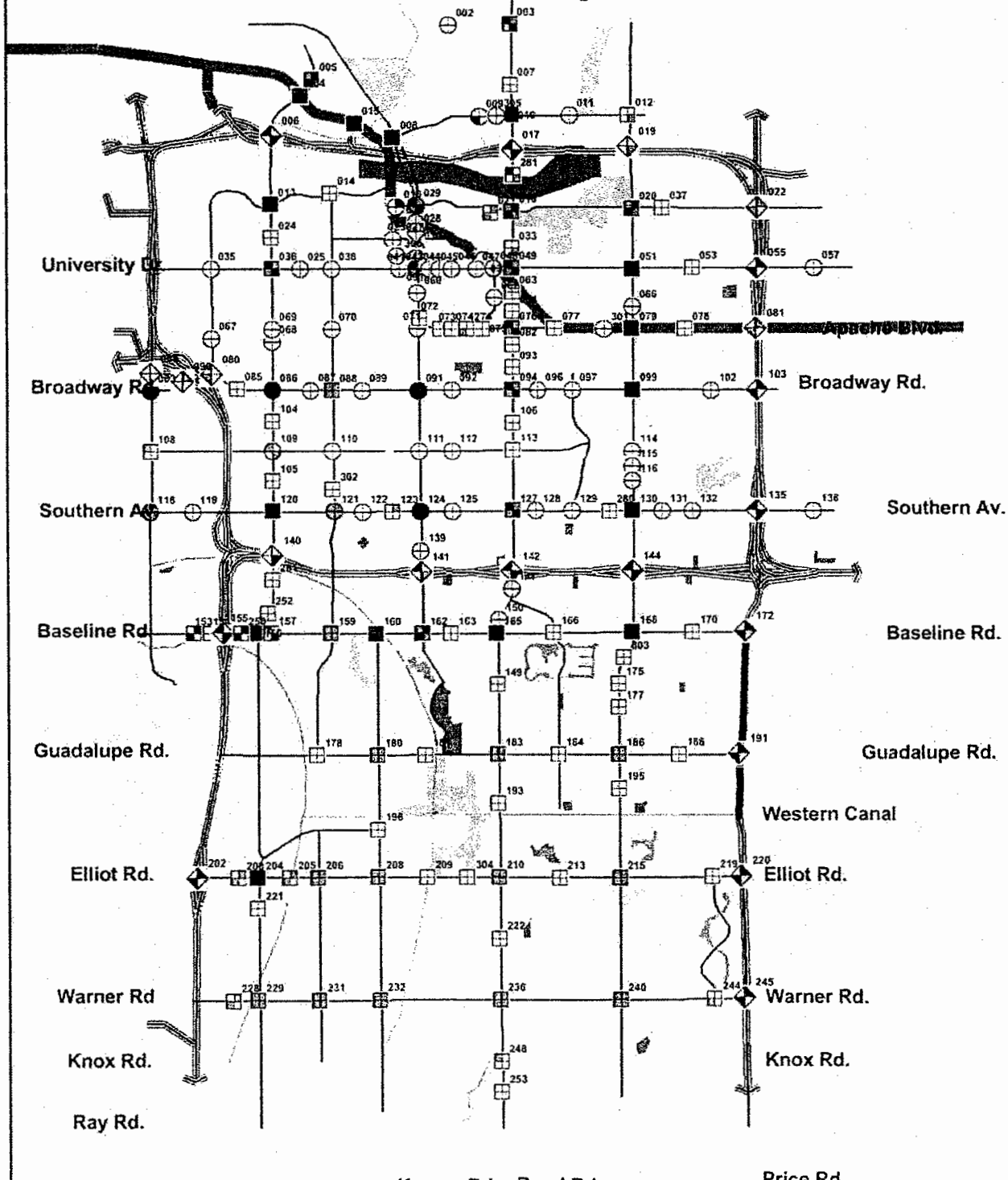
SIGNALS

SYMBOL CODE





DOWNTOWN AREA



TMP-05

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – S2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Jim Decker or Christine Warren**	2.	Telephone: 480-350-8320 or 480-858-2060
3.	E-mail **Jim_Decker@tempe.gov** **Christine_Warren@tempe.gov**	4.	Date: **09/01/06**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Tempe

2. Year (Please check only one box):

   ☐ FY 2008 ☐ FY 2009 ☒ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   Citywide

4. Type of Work (Description of the work to be performed):

   Design-Build Fiber Optic Cable Installations

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $276,832.00

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP ☒ CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $118,643.00

8. Type of Local Funds to be Used: (Please check only one box.):

   ☒ HURF ☐ Impact Fees

   ☐ General Fund ☐ Bond Proceeds

   ☐ Sales Tax ☐ Private

   ☐ Property Tax ☐ Other, Please specify: _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $395,475.00

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

See attachment

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

The City currently utilizes leased telephone lines to facilitate command and control operations at signalized intersections. This project proposes to utilize existing conduits placed in partnership with telecommunication companies to bring fiber optic communications to signalized intersections along various roadway corridors throughout the City. The fiber runs will tie into the ADOT FMS Fiber optic infrastructure as the communications media for command and control operations. Utilizing the existing conduits and the state-owned infrastructure will eliminate the need for leased telephone service to the intersections and increase bandwidth to allow for installation of real-time video detection (data gathering) and CCTV monitoring. This upgrade will require minimal design and construction due to conduits already being in place and the close proximity of the terminating traffic signal control cabinet to the ADOT fiber optic backbone.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

This project mitigates congestion through enhanced regional multi-agency signal coordination and maximizes the use of existing communications infrastructure. Traffic speed improvements and /or traffic management strategies can be coordinated with real-time data sharing to better manage major accidents and / or incidents on the street or freeway network. The City will be able to monitor traffic conditions and adjust traffic signal timing through centralized command and control strategies designed to help both ADOT and other city agencies relieve or minimize congestion.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

No.	Item	Installed Quantity		Unit Cost	Total Cost
1	Fiber cable system installed 9000 LF Inter-duct, 9000 48 strand Signal Mode Fiber, 22 #9 pull boxes.	9000ft		$33.00/ft	$297,000.00
2	Design and Bid @10%				$29,700.00
3	Contingency .05				$14,850.00
4	Landscape repair	9000ft		2.50/ft	$22,500.00
5	Communications equipment, testing and integration	12		$2,000.00	$24,000.00
6	Project Management				$7,425.00
	TOTAL				**$395,475.00**

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

Task 1 Prepare Specifications for equipment biding ----- June 2010
Task 2 Bid ----- July 2010
Task 3 Award Contract ----- September 2010
Task 4 Install ----- March 2011

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: Citywide	2. Name of the Roadway Section Used for the ADT Estimate: **Various Streets**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☒ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes):	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes):	6. Length of the Facility (in miles):
7. Township Coordinate of the Midpoint of the Facility: 1N	8 Range Coordinate of the Midpoint of the Facility: 4E	9. Section Coordinate of the Midpoint of the Facility: 15

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: 35

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☒	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

☒ Includes Traffic Signal Improvements for a Single Agency
☒ Includes Traffic Signal Improvements that Apply to More than One Agency
☐ The Project Conforms to Local Land Use Plans
☒ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

☒ Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

SYMBOL DESCRIPTION

AM= ADOT MODULAR POLE
TM = TEMPE MODULAR POLE
TT = TEMPE TAPERED POLE
F = FULLY PROTECTED
P = PERMISSIVE PROTECTED
O = NO LEFT TURN
S=SPLIT PHASE
EWNS=OPTICOM DIRECTIONS

Quadrants in symbols represent corner vehicle turning from. Example: Northeast quadrant is westbound to southbound left turn.

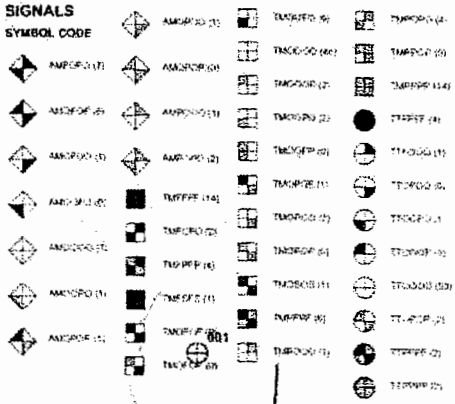
TMFPFP=Tempe Modular pole with fully protected LT movements in the NE and SW quadrants and permissive protected in the SE and NW quadrants.

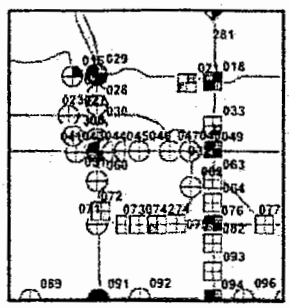
City of Tempe Signal Map

Legend June 2005

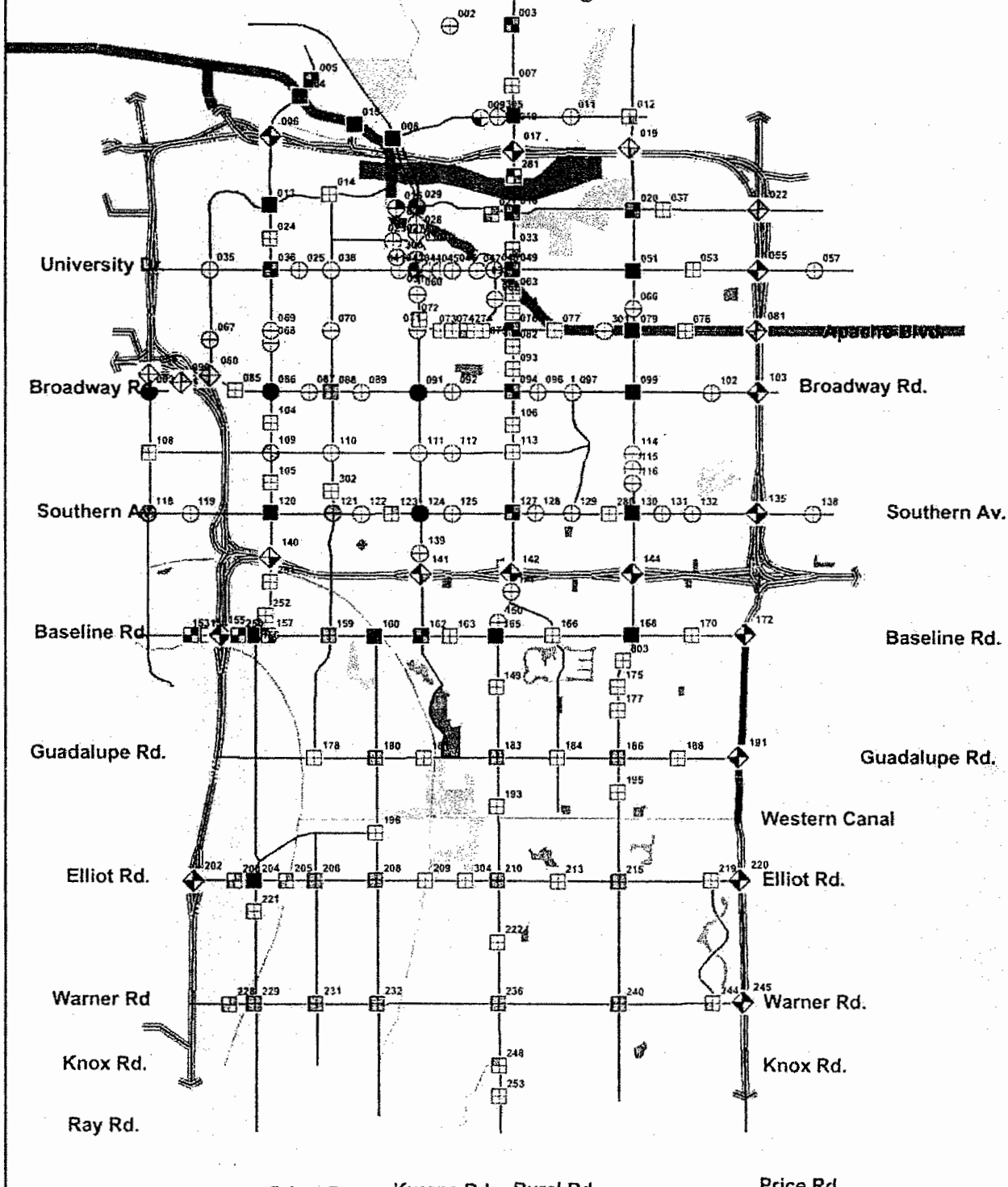
SIGNALS

SYMBOL CODE





DOWNTOWN AREA



TMP-0

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – S2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M**.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Jim Decker or Christine Warren**	2.	Telephone: 480-350-8320 or 480-858-2060
3.	E-mail **Jim_Decker@tempe.gov** **Christine_Warren@tempe.gov**	4.	Date: **09/01/06**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name: **City of Tempe**	2. Year (Please check only one box): ☐ FY 2008 ☐ FY 2009 ☐ FY 2010 ☒ FY 2012
3. Project Location (The project limits if applicable): **Citywide LRT Corridor**	
4. Type of Work (Description of the work to be performed): **Install CCTV monitoring stations at various locations**	
5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.): **$325,832.00**	6. Type of Federal Funds Requested (Please check only one box.): ☐ MAG STP ☒ CMAQ
7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.): **$139,643.00**	8. Type of Local Funds to be Used: (Please check only one box.): ☐ HURF ☐ Impact Fees ☐ General Fund ☐ Bond Proceeds ☐ Sales Tax ☐ Private ☐ Property Tax ☒ Other, Please specify: **Transit Tax** _____
9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested): **$465,475.00**	

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

See attachment

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

The Tempe Transportation Management Center will employ state-of-the-art technologies to manage traffic and transit operations in an increasingly dynamic environment. The center will also serve to inform and advise transportation patrons of real-time travel information including conventional traveler information, Light Rail Transit (LRT), and bus transit schedule adherence information. A key project feature includes monitoring segments of the regional transportation Closed Circuit Television (CCTV) network. This proposed project serves to expand this feature by adding CCTV monitoring capabilities at (25) signalized intersections along the LRT alignment. This expanded CCTV coverage will take full advantage of the communications infrastructure built into the Phoenix East Valley Light Rail Transit project.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

This project will provide CCTV coverage of all signalized intersections on the Light Rail alignment. These video monitoring stations will provide direct and immediate access to the local traffic conditions. Accident and incident management will be enhanced by this additional monitoring capability while simultaneously allowing the transportation management staff the ability to monitor private and public transportation vehicles throughout the Tempe segment of this regionally significant transportation facility, maximizing multi-modal coordination and safety operations. Data gathered locally from this CCTV network can be shared between agencies and across jurisdictions including MAG, Valley Metro Rail as well as the cities of Phoenix and Mesa. This project promotes multi-jurisdictional congestion relief goals by providing a platform to better coordinate LRT traffic signals as well as to respond to accidents/incidents in a more cooperative and efficient process.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

No.	Item	Installed Quantity		Unit Cost	Total Cost
1	CAT5e patch cords	25		$3.00	$75.00
2	Surge protector	25		$116.00	$2,900.00
3	CCTV Camera Assembly (includes on-board video encoder, camera, motorized zoom lens, pan/tilt/zoom, receiver/driver, dome housing, mounting hardware and camera cable)	25		$15,000	$375,000.00
4	Router	25		$3,500.00	$87,500.00
	TOTAL				**$465,475.00**

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

Task 1 Prepare Specifications for equipment biding ----- June 2012
Task 2 Bid ----- July 2012
Task 3 Award Contract ----- September 2012
Task 4 Construct ----- March 2013

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: 48,000	2. Name of the Roadway Section Used for the ADT Estimate: **Rural Road**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☒ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): 4	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): 4	6. Length of the Facility (in miles): 6
7. Township Coordinate of the Midpoint of the Facility: 1N	8 Range Coordinate of the Midpoint of the Facility: 4E	9. Section Coordinate of the Midpoint of the Facility: 15

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: 35

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☒	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

☒ Includes Traffic Signal Improvements for a Single Agency
☒ Includes Traffic Signal Improvements that Apply to More than One Agency
☐ The Project Conforms to Local Land Use Plans
☐ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

☐ Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☒ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

City of Tempe Signal Map

Legend June 2005

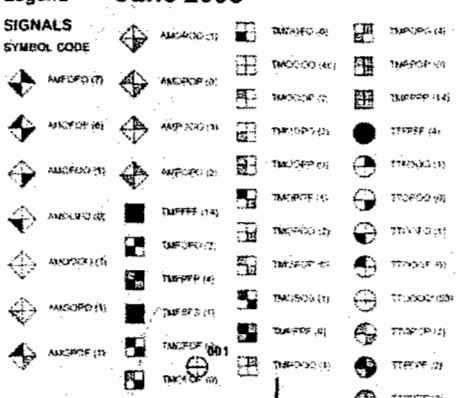
SYMBOL DESCRIPTION

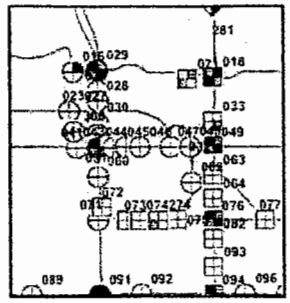
AM= ADOT MODULAR POLE
TM = TEMPE MODULAR POLE
TT = TEMPE TAPERED POLE
F = FULLY PROTECTED
P = PERMISSIVE PROTECTED
O = NO LEFT TURN
S=SPLIT PHASE
EWNS=OPTICOM DIRECTIONS

Quadrants in symbols represent corner vehicle turning from. Example: Northeast quadrant is westbound to southbound left turn

TMFPFP=Tempe Modular pole with fully protected LT movements in the NE and SW quadrants and permissive protected in the SE and NW quadrants

SIGNALS
SYMBOL CODE





DOWNTOWN AREA

University Dr.

Broadway Rd.

Southern Av.

Baseline Rd.

Guadalupe Rd.

Western Canal

Elliot Rd.

Warner Rd.

Knox Rd.

Ray Rd.

Priest Dr.

Kyrene Rd.

Rural Rd.

Price.Rd

Apache Blvd.